

AMATEUR RADIO



Published in the interests of the Wireless Institute of Australia, Official Organ of all divisions of the W.I.A. and R.A.A.F.W.R.



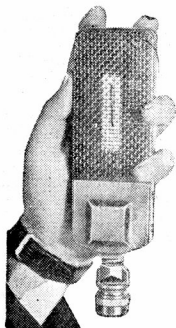
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AMATEUR RADIO

Published by the Wireless Institute of Aust., Victorian Division.

Vol. 5 No. 9

1st SEPTEMBER, 1937.

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All Communications and MSS. should be forwarded to the Editor, "Amateur Radio," BOX 2611W, G.P.O., MELBOURNE.

Subscription to "Amateur Radio" is 6/- per Annum (Post Free), paid in advance.

Should you not receive your copy of "Amateur Radio," notify your Divisional Secretary at once.

Advertising and Publishing Office: Address Publicity Manager, "Amateur Radio," Whitehorse Road, Box Hill, E.11. 'Phone: WX 2429.

NOTE.—ADVERTISERS' CHANGE OF COPY MUST BE IN HAND NOT LATER THAN THE 20th OF THE MONTH PRECEDING PUBLICATION.

1st SEPTEMBER, 1937.

Page One

EDITORIAL

Each month Amateur Radio has tucked away somewhere in its columns the words "Are you a member of the W.I.A.? If not, why not?" One supposes that much of this must fall by the wayside and only a small proportion bear fruit. This is not the fault of A.R. itself for it must be remembered that, as a rule, only members get it direct and the other hams, given to glossing over the wares on bookstall counters, may or may not expend the humble sixpence asked.

It is to the non-member reader, that these words are directed, who, whether he be of the openly vindictive or apathetic type, may possibly say "Why should I join the W.I.A. and get nothing in return for the outlay," forgetting that Amateur Radio itself is the outcome of the Institute's co-operative effort.

Others are of the "lone-wolf" type and are content to make their sole contact with other hams over the air. Meetings bore them, or are inconvenient. Why should they join the W.I.A. Let us face a few facts that to-day stare us hard in the face and deduce therefrom obvious reasons why every licenced Australian Amateur should be a W.I.A. man.

Radio communication has reached a stage where the "man in the street" takes it as a matter of course and ham radio is not the novelty it was several years ago. It is obvious that, unless Amateurs co-operate and prove to the public that organized control is the only method of cleaning up some of the drivel heard from phone stations to-day, their prestige will suffer.

Twelve months ago, new regulations were put into force by the Department with a view to securing

this result. Partial success has been achieved but complete success could have been realised, had every holder of a transmitting licence been a member of the W.I.A. This is no idle boast as the Institute has always stood for co-operative control of the amateur bands, curtailing the activities of the selfish individualist, to the benefit of the majority.

Your moral support is the important thing, not so much your membership fee, but the more financial any organization is, the more it can achieve for its members.

It is certain that the non-members cannot, individually, do anything to improve conditions either on our bands or with the Department whereas a 100% representation of all VK hams would enable us to present a united front to any problem.

Let us make the W.I.A., despite the small number of hams in Australia, second to none as an organization for the betterment of ham radio.

A simultaneous membership drive in all States should do much to achieve this happy result.

Mr. and Mrs. E. Kilborn and daughters wish to thank all Members of the Wireless Institute for their kind expressions of sympathy in their recent sad bereavement in the loss of their son and brother, (late 3KE), especially thanking the Amateurs on the 200 metre broadcast band who showed their sincere respect in observing two minutes' silence during their sessions on Sunday, 20th June.

Will all please accept this as a personal expression of our sincere thanks.

mission line it would probably be difficult to prevent radiation; although by using a concentric tube line having the outer casing connected at ground potential and the inner conductor properly tapped up the coil, such an arrangement could be used very satisfactorily with a single valve tank circuit.

The inductively coupled circuit as shown in 1b used with an open two-wire line would be entirely satisfactory. The centre turn of L2 may be grounded if desired and the line connections equally spaced on either

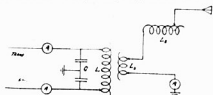


Fig. 1. B

side of the ground connection. In some installations, the grounded centre tap arrangement is most satisfactory, while in others better results can be obtained without it. With L1 and L2 closely coupled, the impedance matching is accomplished in 1b as in 1a by varying the number of turns between line connections. The characteristic line impedance, however, is not a function of frequency although the impedance of the terminal equipment is; so if the operating frequency is changed to any great extent, the terminal coupling must also be changed. Of course

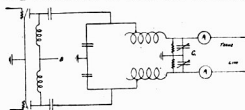


Fig. 2

the maximum power transfer and the minimum of radiation from the line is obtained when the terminal impedance is equal to the line impedance.

There is the disadvantage with inductive coupling however, of accentuating the transfer of harmonic energy with the effective coupling being tighter at the higher frequencies thus tending to counteract the

effect of the impedance mismatch at these frequencies. A capacitive coupled transmission line on the other hand has the advantage of minimizing the transfer of harmonic energy. One such arrangement is shown in Figure 2.

With capacitive coupling it will be observed that the condensers C1 on each side of the ground are made variable usually by having a number of condensers in each bank so that any desired number may be connected in parallel to match the line impedance—of course the amounts between ground and each transmission line wire should be identical. With this method, however, as the frequency is increased the capacity must be decreased and vice versa in order to provide the correct terminal impedance. And with a given capacity, the

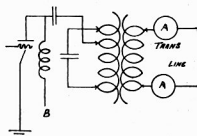


Fig. 3

coupling is weakened as the frequency is increased with a corresponding decrease in the transmission of harmonic energy.

Just as the coupling turn ratio for an inductively coupled transmission line is a function of the two impedances to be matched, so is the required capacity of C1 a similar function of these two impedance, the valve plate to filament impedance and the transmission line impedance. With a given transmission line at a given frequency, if higher impedance valves are used, the capacity on each side of C1 must be increased. A case where this is applicable is in a high powered transmitter where each of the push-pull valves actually consist of two or more in parallel and sometimes it is desirable to operate on reduced power with fewer valves in the final amplifier.

Probably the most common method of terminating a transmission line at the antenna end is by means of a tuned circuit which in turn is inductively coupled to the antenna. Such an arrangement is shown in Figure 3 where the coupling between L1 and L2 must be so adjusted that with the proper value of C1, the transmission line is delivering power into a terminal impedance that matches the line impedance. It must at all times be remembered, however, that the currents in the two transmission lines must be identical to prevent radiation from the line itself.

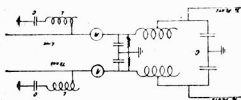


Fig. 4

In tuning the transmitter, transmission line coupling, and antenna system, it is impossible to list a definite set of conditions that must be met in a system as described because of the differences in actual circuits used, operating conditions, and so forth; but in general simultaneous conditions should be obtained although there will be the usual compromises. In the first place, there should be a maximum antenna current with a minimum plate current for satisfactory power output, while at the same time there are equal values of current in the two transmission line wires. Then care must be taken so that distortion is not introduced by poor adjustment of the output circuits of the final power amplifier.

Radiation of harmonic energy sometimes becomes a little troublesome, although as much of this as possible should be eliminated at the transmitter. One method of accomplishing this is shown in Figure 4

which is merely an extension of Fig. 2. The two series circuits LC between each transmission line and ground are each tuned exactly to the second harmonic of the transmitted signal. These circuits, to be effective, however must be of very low loss design at the frequency of the second harmonic when they act as practically dead short circuits to ground, and thus this signal should be almost entirely eliminated from the antenna. Of course, if the third harmonic is troublesome, the circuit LC should be tuned to that frequency. In addition, a very low loss low reactance parallel circuit LC may be placed on each side of the transmission line and tuned to the frequency of the offending harmonic; but to be effective in this case, it should have a large value of capacity and a small value of inductance.

TRANSMISSION SCHEDULES.

September, 1937.

VK2ME, SYDNEY.

Sydney Time.

G.M.T.

Sundays: 3 p.m.-5 p.m. 0500-0700

,, 7.30 p.m.-11.30 p.m.

0930-1330

Mondays: 1.30 a.m.-3.30 a.m.

1530-1730

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Overmodulation Indicators

VK2JR.

(The following article covers essential features in the lecture delivered by Mr. J. G. Reed, VK2JR at the June meeting of the N.S.W. Division of the Wireless Institute of Australia.)

The advent of very efficient Class "B" modulator equipment has put into the hand of the experimenter a means of fully modulating carrier waves of quite respectable power.

Listening to the "DX" bands leaves little doubt as to the modulation capabilities of the modern transmitter. Over modulation seems the order of the day, and the consequent side-band "monkey chatter" spoils many a choice piece of long distance work.

Under 100 per cent modulation, the current in the modulated amplifier makes excursions between the limits of approximately zero, and twice normal value. Should the modulator stage supply excess power to the modulated amplifier the current in the anode circuit of the latter stage will suffer sudden interruption. This break is akin to that caused by c.w. telegraph keying of the carrier at audio frequency rate. It needs little description for one to realise just how annoying interference can be from a transmitter operating with final stage keying minus a click filter. When this keying is carried out hundreds of times per second as is the equivalent with sustained overmodulation the result is disastrous to adjacent communication channels.

Overmodulation in the positive direction is not so serious as this merely introduces distortion of the fundamental tone which appears as harmonics of the latter. The negative modulation is usually so rapid that the sudden carrier interruption causes the generation of transients with frequency components extending far beyond the normal sidebands associated with speech transmission.

Series modulation offers a satisfactory solution of the "monkey chatter" problem. With this system

wherein the modulator operates as a series resistance to the modulated amplifier, in distinction to the function of an alternating current generator as in the Heising and Class "B" systems, it is impossible to suddenly interrupt the carrier wave. As the modulator grid is made increasingly negative in the series system, the final sloping cutoff of the modulator valve causes a tapering off of the current towards the zero value. It is physically impossible to cause the anode potential on the modulated amplifier to reverse, and cause the sudden interruption characteristic of the previously mentioned methods of modulation. Space is too valuable to go further into the principles of the methods of modulation, but should the reader desire additional information, a QSO with VK2JR any Sunday morning on 7 or 14 mc bands will be gladly worked.

An interesting example of the freedom of series modulated stations from side band "monkey chatter" is available any evening by listening to the New Zealand stations 1YA and

1A, both of which operate on a series system. Australian National stations 5CK and 3WV on adjacent channels which operate with Heising modulation are regular "monkey chatter" offenders, particularly during the jazz music sessions. (Hf.)

"Radiotronics" Technical Bulletin No. 77 (A.W.A. Valve Works) gives some interesting information together with suitable valve combinations for series modulation.

As previously mentioned, the cause of side band chatter is the sudden reversal of anode potential to the modulated amplifier. If these short time period impulses can be indicated to the operator it is possible to regulate the depth of average modu-

lation so that overmodulation becomes merely an intermittent and not a chronic phenomena.

The circuit illustrated in Fig 1 outlines the connections for an overmodulation indicator which will faithfully indicate all forms of modulation which tend to turn the anode potential negative.

The essential features are a rectifier valve and a neon or gas discharge lamp. The latter may take the form of the familiar "Osglim" night light or one of the miniature equivalents as employed for station indicators on the Sydney Underground Railway platforms.

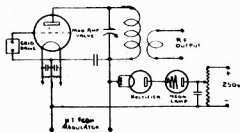


Fig. 1.

It is necessary to provide a winding for the rectifier valve which is insulated to earth for the peak potential of modulation which may be taken as double the steady d.c. value. With medium power and voltage transmitters it is possible to employ the anode current to heat the filament of the rectifier valve if the latter has a filament of the 60 m.a. class or suitable value for the anode current used.

With the filament of the rectifier valve positive there will not be any tendency for electrons to flow through the modulation indicator circuit, but should the filament go negative with respect the anode—which is at ground potential, current will flow through the Osglim lamp causing it to give a flash.

Owing to the fact that the Osglim lamp requires a minimum voltage of approximately 180 volts to cause ionization it is necessary to apply a polarising potential to secure immediate operation, and to avoid a delay until the negative modulation

has built up the desired breakdown potential.

The earth return circuit from the Osglim lamp is taken to the slider of a potentiometer connected across a rectifier capable of generating a minimum of approximately 200 volts.

To set this potentiometer to the correct value, make a temporary connection from the anode of the rectifier valve as indicated in the dotted lines—and increase the potentiometer until the lamp just commences to flash. It will be observed that the lamp will continue to glow until the potential is reduced to approximately 160 volts. Keep the potentiometer at the higher setting and lock it in position. With this adjustment the lamp will flash immediately overmodulation takes place, and with the slight backlash before extinction, the glow will last for sufficient time to give an unmistakable indication to the operator. With a little calculation and meter measurement it is possible to calibrate the scale of the polarising potentiometer permitting it to be set for operation at other values than 100 per cent, such as 80—90 or 120. Too high a value for peak indication is not desirable for obvious reasons. A little practice will enable the operator to judge a suitable average modulation which gives only occasional overmodulation peaks.

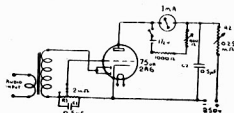


Fig. 2.

If this simple indicator is fitted by "DX" specialists there will not be that tendency to try and get across by shouting and consequent serious overmodulation.

Should the foregoing overmodulation indicator appear a little too ambitious for the experimenter not in possession of a suitable transformer for the heating of the special modulation indicator rectifier, it is

possible to make quite a simple percentage modulation indicator which measures the peak instead of the average modulation as in the simple valve voltmeter.

The circuit of this indicator is given in Fig. 2, in which it will be seen that use is made of a diode-triode valve and a milliammeter. The principle is as follows:—

With zero signal the grid of the triode section will be at cathode potential and the anode current will be at a suitably high value. On the arrival of a signal, either of steady or complex tone, the diodes rectify the positive pulses and build up a negative charge on condenser C.1. This charge is communicated to the grid of the triode section which depresses the anode current correspondingly. When the signal ceases the charge leaks off the condenser and the grid of the triode returns to normal. The time constant of the condenser on charge is very short, depending mainly on the resistance of the diodes, but on the discharge period, the time constant is much higher depending on the value of the shunt resistance R.1. With the condenser at 0.5 microfarads and the resistance at 2 megohms, the discharge time constant will be one second which permits the needle of the indicating meter to swing close to the peak value even for very irregular peaks of complex wave forms. A suitable valve is the type 2A6 or equivalent in the 6.3 volt series of glass or metal envelope. At zero grid bias on the triode the anode current, with a series anode resistance of 100,000 ohms from a 250 volt supply, the anode current will be approximately 1.5 milliamperes, while for a resistance of approximately 200,000 ohms from the same source, the current will be approx. 0.9 ma. A peak potential of 3 volts will generate sufficient bias to depress the anode current of the triode section closely to zero.

If the diode-triode peak indicator is connected to a circuit through a transformer either direct or through an amplifying valve it will be possible to measure the peak values of audio tones and speech. Assuming a coup-

ling transformer of 3:1 ratio it is possible to cause the anode current of the triode to drop from approximately one milliampere to near zero with a line voltage of one volt peak corresponding to a signal level of below minus six decibels in a 600 ohm circuit.

Should this range be too sensitive a lower ratio transformer can be used or either a switch fitted to permit the triode grid to be tapped down the resistance R.1. If the latter consists of a 2 megohm unit in series with a 0.25 megohm resistance, approximately one tenth sensitivity will be secured, corresponding to a reduction of 20 decibels or a net value of 14 decibels above zero reference.

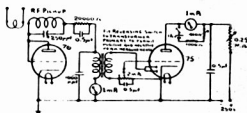


Fig. 3

Inspection of the characteristics of diode triode valves will enable experimenters to modify circuit values to meet special circumstances.

If this form of modulation indicator is to be operated as a monitor to the transmitter, its input transformer should be connected across some section of the sub-modulator having a suitable signal level, and a calibration for 100 per cent modulation conditions made. Once having determined a value on the meter scale for the 100 per cent position, it is possible to mark other values by interpolation or by calibration with a 50 cycle low voltage supply and standard a.c. voltmeter.

Special connections are made for the meter to permit it to read in the normal direction, with the needle at "0" for zero signal, and towards maximum for full signal. A simple balance circuit requiring one small flashlight 1½v. cell is given in Fig. 2. A switch should be fitted to break

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Break-In Operation

By Roth Jones, VK3BG.

Any system of operation that can lessen the evergrowing problem of QRM on our already crowded bands is a thing to be encouraged. Nothing is worse than to be working a chap and when he starts on a decent "over" when some fone station or chirpy T5 note gets on top and makes most of the dope impossible to copy. We say to ourselves, if only we could stop and tell him to QRX for a few minutes, what a blessing it would be to one and all! Then there is the case of the chap who calls and keeps on calling. What a waste of power and unnecessary QRM. Surely there is some way of getting rid of this problem, lessen the QRM, and make the QSO much more enjoyable. Well there is, and its a pity every chap in VK did not use it. Yes its ye olde Break In. Years ago they tell me (am only a kid myself and can not remember long back) break in operation was used regularly as clockwork for in those days the boys had 50 watt TNT rigs. When the key was up the receiver was on and he could easily be interrupted. But of late it seems that the p.a. is the only stage to keyed. Naturally the oscillator and associated doubler stages are running and if the receiver is switched on it is blocked out. This may not be the same with a good S.S. Super but even then the oscillator is working and will occupy sufficient space to blot a station that is being called. There is only one way out of the problem. The oscillator must be keyed. With high power final stages they will naturally have to be biased to at least cut off. But why have this high power! 50 watts is ample for international communciation and with the advent of the power pentodes such as the 6L6, 6L6g, 807 etc. a pair of these tubes will readily give 50 watts output and require only a few volts bias or it may be got by the cathode system and utilise few of the precious volts. So for cheap and efficient break in operation an excellent rig can be made up with

a small oscillator such as 59 tritet and a pair of the beam power pentodes in the final. Now for a few of the advantages of this system.

Naturally a separate antenna for the receiver is necessary but with any efficient receiver only a small wire is necessary. The insertion of "BK" in short means that you can hear the other chap when your key is up (and it is always up between words) he need only send a few dots and you will immediately stop transmitting and see what is wrong. May be it is QRM he need only send "QRM QRX" and when it is all over an OK enables the QSO to be continued in fine style. Imagine if you have continued your over and you were giving some lengthy dope the QRM came on early in the over. Besides the needless waste of power there is also unnecessary QRM being caused. A further advantage is that of calling a chap using the "BK" method. It might be your misfortune not to clock a called station and your friend a few 100 yards down the street does. But the receiver is on and soon as you hear the station called start up it is no use calling him and you can go off on another CQ.

With a few minor accessories our great system of operation can be made to work a trifle better and we one and all will get a little more "kick" out of our QSO's. Without the assistance of some kind of monitoring equipment we can carry on our QSO's but it is only natural to expect some form of clicks in the receiver no matter how efficient the filter system may be. Personally the writer always likes to have an idea of the keying. The monitor system in use here is an audio oscillator, similar to the one we learnt the code on in the old days. The output of this monitor, if we may call it such, for it is not really a monitor, as it is not monitoring the emitted signal but, for all practical purposes it is as efficient as we need with crystal

control. The oscillator is placed in parallel with the output terminals of the receiver which has a transformer in the output to keep the "juice" out of the fones. When the key is placed down, the oscillator is keyed and the P.A. stage is working. The key also is placed in the lead of one of the phones to the plate on the oscillator and makes the circuit thus registering an audio oscillation in the fones. As soon as the key is up the audio oscillator stops, the transmitter is off the air, and the receiver is operating. The antenna is periodically taken off the receiver and the receiver tuned to one of the overtones and monitored to see if the note is all that can be desired. The writer shortly hopes to build an efficient monitor with reasonable output and place it in parallel with the phones instead of the audio oscillator. What clicks there are are soon drowned in the audio oscillation volume is increased. In conclusion I would urge all operators in Australia who have not already tried this great system to revamp the old rig and, if they do not think biasing high power triode finals warrants the cash, then revamp her up with some of these beam power penthodes and see what a thrill you will get out of break-in QSO's. The QSO is much more intimate, private, and it is just like talking to a chap over the telephone, for you will soon get "broke" if there is anything wrong. Without fear of contradiction, I can honestly say that if break in operation could be used by all those who operate on the 20 and 40 metre bands, especially the former, the QRM, which can be noted especially when the W's are coming through, could be reduced, thus further helping to provide enjoyment for the brasspounders. Little can be said about fone operation. Naturally, break-in can not be used, but with the push to talk process, QRM can be reduced. The writer not being a "fone hound," cannot write about this method, so perhaps one of the "hounds" will.

(Continued from page 9)

the circuit of the dry cell when the level indicator is not in operation.

It is possible to operate this form of indicator in conjunction a radio

frequency carrier indicator. Once this unit has been calibrated it is possible to couple it to any transmitter, and make a rapid analysis of carrier shift, also peak modulation percentage of both positive and negative modulation is possible if the transformer is fitted with a reversing switch. The circuit for this combination instrument is given in Figure 3, together with suitable circuit values. For economy employ one meter in conjunction with a change-over switch for use in carrier or modulation positions.

The tank circuit associated with the r.f. rectifier should be link coupled to the output circuit of the transmitter, and the coupling varied until standard indication on the r.f. carrier rectifier is obtained. A reasonable value of "C" in the monitor tank circuit ensures ample volt-ampere capacity to handle the damping effect of the diode rectifier during modulation peaks.

Having adjusted the instrument for a steady carrier modulation should be applied. If carrier shift is present, it will be indicated by a movement of the meter.

Transferring the meter to the audio section will permit the modulation percentage to be measured, either on the positive or negative side.

While it is not possible to furnish data to permit a direct calibration of the instrument, the following information will serve as a guide to those sufficiently interested to build one of these outfits.

With one milliampere d.c. through the 20,000 ohm anode resistance in the r.f. diode, 100 per cent modulation will cause an audio frequency voltage of 10 volts peak to be generated across the primary of the coupling transformer T.1. The diode potential in the audio section will be 10 volts with a coupling transformer of 1:1 ratio, and if this is reduced by the potentiometer connection across the leak resistance R.1 to approximately one third of this value, the anode current of the triode section will be depressed to near zero. With the special reversing current from the

(Continued on Page 28)

Sydney Sesquicentenary Celebrations

W.I.A. Officially Recognised.

For the past two years Federal Headquarters of the Institute has been located in Sydney, and this year's Federal Convention was held in Sydney on January 30th, 31st and February 1st.

At that Convention the N.S.W. delegate was successful in having Federal Headquarters retained in Sydney for a further period of two years, and also in having the usual order set aside to enable next year's Convention to be again held in Sydney. This was done in view of the celebrations to be held during 1938 in connection with the 150th Anniversary of the foundation of the colony of N.S.W. and city of Sydney by Governor Phillip. The Institute was desirous of taking an active part in the celebrations and so the other States waived their claims to having the Convention held in their respective cities.

Following on this decision the N.S.W. Division entered into negotiations with the N.S.W. State Government with a view to having the Institute's activities during 1938 officially recognised, and as a result of this it is now learned that next year's Federal Convention has been accepted as one of the Official functions forming part of the programme of celebrations.

This indicates that the Government has an appreciation of the part the radio amateurs and the W.I.A. are playing in forwarding the development of wireless communication by experimenting along lines not ordinarily covered by commercial services. Other aspects are the establishment of a network of stations suitable for emergency work and the training which we receive as operators.

In addition to this recognition of the more formal part of our activities the Government has approved of the 1938 VK-ZL DX Contest, to be held in October 1938, as a means

of creating a world wide interest in the Sesquicentenary of the foundation of the nation. This contest is to be conducted by the N.S.W. Division, permission having been given by Federal Headquarters some time ago, and it is expected that it will arouse an interest never before taken in any such contest. Publicity on an extensive scale will be commenced before the end of this year, with a view to presenting the facts of the contest and of the Sesquicentenary before the amateurs in every country of the world.

To show its appreciation of the value of this Contest in advertising N.S.W. and Australia, and also as a means of promoting international fellowship and good feeling the Government has given the Division a substantial monetary grant. Three special Sesquicentenary medals have also been given in connection with the celebrations.

It is indeed gratifying to find the Government taking such a practical interest in the work of the Institute and our thanks are due to those who have had the foresight thus to help forward our amateur movement.

Further information will be made available as received, and full details will be announced immediately after the conclusion of the 1937 Contest. When this is known let us all start to work and make the VK-ZL Sesquicentenary DX Contest the greatest contest of all time!

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R. E. Jones, VK3RJ, QSL Manager.

Arch Woolnough, VK3BW, having had his appetite for sea voyages whetted by a cruise to Fiji last year leaves on Oct. 18 for a cruise to New Zealand on the "Orion."

Dr. Santangeli of Milan, Italy whose call I1ER has been temporarily suspended reports good reception of VK stations on the 14 mc band. He reports receiving the following stations:—

2 HO, FM, NO, GV, CL, HP, ZF, GM, AE, AEK, AH, TF, QX, LD, XU, XJ.

3 JT, YP, EO, UX, UH, BJ, ZZ, CN, ZJ, HR.

4 RX, GK, EL, WL, ER, HG, EO.

5 HM, WK, FM, 7LZ.

Roth Jones, VK3BG is enthralled by results on 14 mc and is considering abandoning all other bands.

G5TR advises through one of our foremost YL listeners—Miss Buscar Rowe—that any station on 14 mc signing G5TR, is a pirate.

The new QRA of the QSL Bureau for New Zealand is:—QSL Bureau, N.Z.A.R.T. Box 489, Wellington, N.Z.

This Bureau requires the QRA of the following Victorian stations:—

3BE, BN, EA, IX, IV, LV, PZ, RL, SQ, TI, TW, UC, VM, XC, XN, XE, XV, ZE, ZY.

Owen Williams, VK3OU claims his new QRA in Brighton Vic., as the best yet except for 3PH and 3YG.

Dave Duff, VK2EO, VK3EO is gracing the decks of H.M.A.S. Sydney as a P.O. Telegraphist. The Sydney is on an extended cruise.

Norm Buzzacott, VK3TD and ex many VK2 and VK3 call signs is at present hibernating at Lubeck, Vic., where he helps to keep 3DB's off-spring 3LK, on the air.

The once strong Laverton contingent has scattered to the four winds and now consists only of 3HT, 3DS, 3TQ, and 3EZ.

A stamp to this bureau, 23 Lendale St., Box Hill, Vic., will secure cards for the following:—

3AT, AP, AQ, BJ, BS, BV, CU, CX, DQ, EN, ES, FK, FT, GA, GM, GP, HE, JN, JR, JV, KG, KP, KT, NG, NI, NT, PH, QB, QJ, RD, SB, SG, SE, ST, TB, TZ, UF, UJ, VB, VM, XD, XE, XU, XN, YS, ZB, ZC, ZF, ZW, ZG, Dyoon Webb.

Cards for the undermentioned "have but a little time to stay." The grim reaper claims all on hand on Sept. 30.:—AD, AX, BL, BX, CM, CS, CW, DJ, FM, FN, FS, GJ, GO, IL, JE, JS, KA, KY, LN, LY, NB, OZ, PA, PN, QX, RE, RL, RW, RQ, UN, VK, XA, XQ, XG, XK, XZ, YF, ZO.

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Telephony Operation

(By T. L. Danks, ZL3BK, Publicity
Officer, N.Z.A.R.T.)

Looking through recent issues of this magazine, I have noted some excellent technical articles dealing with telephony transmitters, but, for some considerable time, no article as appeared dealing with the operation of this type of transmitter. I feel, therefore, that a few remarks upon this matter would not be out of place.

An amateur may have the finest transmitter in the country, but it is of little advantage to him or his fellow amateurs unless he operates it efficiently. I do not profess to be a model of efficiency, for all of us have our faults, but, having been consistently on telephony for some time, I have noted several matters which I consider could be improved to the advantage of all.

The giving of reports on telephony is generally rather poor, and many amateurs obviously either do not understand the QSA-R system of reporting or are too lazy to bother about giving them correctly. Common practice has developed an unofficial interpretation of this system which, being incorrect, is better rectified. The R strengths are generally given reasonably well, but generally, to my way of thinking, too much on the high side, and there is no such report as R "Max," meaning a point above R9. The QSA portion of this reporting system should be the easiest to give, but, for some reason, is the part most abused. QSA5 does not mean 100 per cent. readable only; it means more than that. QSA5, according to one well-known text book, means "perfectly readable," and this definition, whilst correct, rather lends itself to misconstruction on telephony. The correct definition of this report is that the incoming signal is such that, irrespective of what static or interference there is the transmission is syllable—not word—perfect. In other words, not one minute detail is missed. QSA4 means 100 per cent. readable from a

sense point of view, or, expressing it in a different way, QSA4 means that the signal is received so that the listener is able to make complete sense out of all being said to him, even though a syllable or word here and there may be missed through static or interference imposing itself on the signal. QSA3 meaning 50-75 per cent. readable, and QSA2 less than this, are generally given fairly correctly, and so call for no comment. I think the reason why QSA5 and QSA4 are given incorrectly is because on telephony one is more easily able to imagine, or construct, what is being said than when a Morse signal is being received.

Far, far too much time is wasted in the average contact through verbosity in calling, going over to or signing off with, the station, or stations, being worked. How many times do we hear a station calling "CQ" something like this?—"Calling CQ—calling CQ—calling CQ—VK2AA calling CQ," and etc. Why the necessity for the repetition of the word "calling"? A better, quicker, and more efficient way would be simply, "CQ—CQ—CQ—VK2AA calling." When "coming back" to a station after he has called "CQ" all that is necessary is this, "VK2AA—VK2AA—VK2AA—VK2AB calling you," with a suitable number of repetitions. When you "go over" and find you have contacted, waste no time, exchange reports immediately, and then, once both know how these are being received, go on with the contact. Too many amateurs make a practice of making their first over a long one, without first ascertaining how their signals are being received. During the contact, when going over one to the other, make it as brief as possible. "VK2AA—VK2AB over" and "VK2AB—VK2AA back" is really all that is necessary.

In the multi-way contact this becomes even more important. Many and varied are the styles adopted

during this type of contact, but try to avoid needless repetitions. Suppose VK's 2AA, 2AB, 2AC and 2AD are in a multi-way contact, VK2AA is talking, and has to "go over" to VK2AB. "VK2AA working VK2AC—VK2AD and going over to VK2AB" is all that is necessary. By adopting such brief, though efficient, methods, much more time is then available for talk on other matters, and it to the advantage of all. Of course, circumstances vary, and such a brief method would not be applicable where signal strengths are low, but the foregoing may be of some use to those who spend too great a portion of their time in this matter.

"Signing off" is a five or ten minute matter with some stations. There is no necessity, surely, for a long and involved signature, nor is it, I think, the time for a resume—often not brief—of all that has been said. Make it snappy and to the point. Many amateurs often neglect, when signing off first, to add the words, "—and going over to so-and-so to sign off." If you neglect to do this you often cause another amateur who has been waiting to call you after the completion of your contact to call you needlessly, as often one is able to copy but the one station in a contact through interference or the such like on the other station. In a multi-way contact this may be even more annoying to the station waiting to call.

I have often heard a station "sign off" half a dozen times before finally closing down. This is bad operating, and, unless something important makes you "come back" after "signing off," do not put your station on again, but listen around the band and see if any other station is calling you.

When "coming back" to a station, do it quickly. Too many stations have not made provision for this in their construction, and no station need take more than five seconds to "go off" or "come on" unless, of course, generators have to be contended with. The use of "break-in" on telephony is not as general as it might be, and its adoption would help to speed up communication con-

(Continued on Page 28)

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28 and 56 M.C. Notes

A. Pritchard, VK3CP.

Ten meters has shown a decided improvement these last few weeks with all continents once more coming through. VK3HK contacted HK1JB at 11.50 a.m. on the 18th July, and sigs were r5. VS1AA in Penang is an interesting contact round 7 p.m. during the week-ends. G2XC and G6DH are on every evening at the usual time, i.e. 7 p.m. J2IN is r8 at 6 p.m. most evenings, J8CF in Korea T8 r8 at 6.30 p.m. on app. 28400 KC. ZE1JU, ZE1JJ, ZS1C and ZS1H are also on during the week ends from 4.30 to 7 p.m. VK3BQ is receiving r5 with phone to G2XC, showing a marked improvement with the new European beam. Also Max has a 70 deg. angle V Beam on the States with 4 full waves over all, hung from the 80 feet stick and getting identical reports to 3YP. At 3YP Patto is kept busy with around 40 phone qso's each Sat. and Sun. morning, the H type beam putting in r9 signals. The car QRM problem was solved here at 3CP with the potentiometer limiting control on the screen of the 2a5 audio tube (Amateur Radio. 3YP. Nov. 1936) with honestly no weak contacts lost. W6GCX is probably the most outstanding sig from the states; his line up is 6L6G, 40 Mx tri-tet., 801 doub. RK20 buff, PP 150 T's final, 800 watt input.—xtal mike, 57 56, PP 45's grid modulation 4½ waves H type beam. VK3HK is putting in remarkable phone, giving us real 100 per. cent. modulation, tested by his 3 inch screen cathode ray oscilloscope outfit. The line up on 10 mx is, 6a6, 6a6 Jones exciter, RK25 buff, 210's PP class C—mod. has xtal mike, 57, E435, 27, PP 27's class A, 4 2A3's class AB—80 Mx zepp on the 8th harmonic. The best sigs. from the States are W2TP, 3GQL, 4EEV, 5ALK, 6ITH, 6NDC, 7MB, 8DYE (CW), W9EKD. W9LQ has a Collins outfit with a 201 final amp. frequency controlled by the Rubber xtal system. Regarding 56 mc, W5EHM has put up an enviable record, 50 contacts of over 1000 miles each. 600 watts input was used,

although the receiver was only a super regen. On 10 mx his antenna is a V beam with 5½ waves on each leg. VK3BW has completely re-built his 9 tube RX; it is a copy of W6DOB's in May '36 Radio. The HF osc. uses the 4th harmonic on all bands for stability. The super here at 3CP has the HF osc. on 30 mx for 10 mx operation and on 15 mx for 5 mx work. Using this 3rd harmonic output requires the HF osc. gang condenser to be app. twice the size of the rf and det gang condensers, if they are across all the coil turns. W6LBX has excellent sigs. with 15 watts from an RK20 sup. mod. TI2RC in Costa Rica has excellent phone with PP 210's final. G6DH contacted YL2CD on 56 mc receiving r5. The input was 60 watts to an ESW501 with a long lines osc. circuit; the antenna has 8½ waves tapped directly on. VK3CZ has been experimenting with his 10 mx final PP 800's in the Push Push circuit on 56 mc; although no modulation has been used a very good resonance dip is obtained and should give us another xtal controlled rig on 5 when the new super is under way. G5ML is also on each Sunday between 11.00 and 13.00 B ST with phone and cw using 300 watts to a rotating beam ant. G6ZQ is xtal controlled also on 56 mc with 25 watts. In Mexico there is considerable interest on 56 mc; XE1AY, XE1G and XE2N are keeping a constant watch for dx. W3GLV will be testing with a 1000 watts on 56 mc in December he has heard most W districts. If the present good conditions keep up, a one-day WAC should be obtained on 10 mx within the next few weeks.

Notes for August issue from VK5 and Western District sent by radio to VK3MR arrived too late for inclusion owing to 3MR being mistaken about the closing date. Snow is now au fait with the position and September's notes arrived before the 18th.

Divisional Notes

To ensure insertion all copy must be in the hands of the Editor not later than the 18th of the month preceding publication.

N.S.W. Division

W. G. Ryan, Secretary, VK2TI,
Box 1734 JJ, G.P.O., Sydney.

Country Zone Officers.

Zone 1 (Far West).—J. Perooz, VK2PE, Hope Street, Bourke.

Zone 2 (North-West).—H. Hutton, VK2HV, Byron Street, Inverell.

Zone 3 (North Coast).—R. J. Berry, VK2NY, 54 Bacon Street, Grafton.

Zone 4 (Hunter River and Coal-fields).—R. W. Best, VK2TY, 57 Hunter Street, Newcastle.

Zone 5 (South Coast and South-West).—R. Ross, VK2IG, 673 David Street, Albury.

The Division has adopted a new system of obtaining station reports whereby each member receives each month a printed report sheet which is to be completed and forwarded to the Zone Officer. It is hoped that this will create a wider interest in reports for this magazine, and it should assist the Zone Officers in the compilation of notes. The result of this innovation should begin to be noticed in our next issue.

At the July meeting of the Division Mr. H. W. Caldecott VK2DA tendered his resignation from the Divisional Council on account of his increased work as Federal Secretary of the W.I.A. Mr. Caldecott's resignation was accepted with regret and appreciation was expressed for the services rendered by him in the past, extending over several years. Mr. J. B. Corbin VK2YC was elected unopposed to the vacancy. Mr. Corbin, who has been N.S.W. QSL Officer for some years, has been an

unfailing supporter of the Institute and has worked very hard in its interests. As QSL officer he is of course popular with all.

Some mention was made in last month's issue of having obtained the original Certificate of Incorporation of the Institute. The negotiations leading up to this were handled by Messrs. Moore, Goyen, Power and Ryan, to whom must go the thanks of the Division for the able way in which they carried out the work. The memorandum and Articles of Association are being discussed at present with a view to altering them where necessary to conform with the needs of the present Division.

Prominent members of the Division who have been taking an active part in the D.A.S.D. contest are VK2DA, 2EL, 2HP, 2JX, 2RA, 2TI, 2VN and 2YC and some good scores are anticipated.

Results are to hand for the 1937 B.E.R.U. Contest, the outstanding participants being as follows:—

Senior Trophy, VK3EG.

First Seven in Australia, VK3EG, 3MR, 2AE, 6LJ, 4YL, 2TI, 4EL.

First Three in N.S.W., VK2AE, 2TI, 2EG.

Junior Trophy, G6RH.

First Seven in Australia, VK3MR, 2XT, 2YC, 6LJ, 4AP, 4GK, 2XL.

First Three in N.S.W., VK2XT, 2YC, 2XL.

U.H.F. interest continues to increase, and the idea of a monthly 56MC test has been received with approval. Our congratulations go to the Queensland Division on its recent highly successful 56MC Field Day.

N.S.W. DIVISION U.H.F. SECTION.

Possibly the most important feature of the month's U.H.F. doings was the receipt of a letter by Mr. Knock 2NO from Cecil Mellanby of Pwllheli North Wales who reported hearing a signal on 22nd November, 1936 signing VK2N and the second letter was unreadable.

It is interesting to note that within a quarter of an hour of this time 2NO was using a Reinartz rotary beam pointing approx. NE in communication with 2HL of Chatswood. The receiver used by Mr. Mellanby, who by the way has verification from four American 56 MC stations, uses "two stages of super-regeneration with crystal rectification and quiescent push pull audio." Just what is meant by this expression is not quite clear.

At the last meeting of the U.H.F. Section of the Institute, held at the Y.M.C.A. Building on August 5, the regular monthly tests from 11 a.m. until 8.30 p.m. were confirmed, and will continue until further notice.

The next of these tests will take place on Sunday the 29th inst., and the schedule to be followed is given herewith. It is hoped that as many stations as practicable will be included in future tests, and notification of their availability to operate on the test periods will be much appreciated when making up schedules.

The last test was held on Sunday, August 25. Sydney stations participating were 2TI, 2NO, 2JU, 2HL, and 2LZ, several other Sydney stations also being on the air. In the country, 2GU, 2DN, 2PN and 2AFB were active, while 2UV was heard and worked in Sydney, from Avalon. Unfortunately, no Newcastle stations were available on this occasion, and only local working was possible.

Following on successful tests made in other countries, the N.S.W. division is inaugurating U.H.F. tests to be held regularly at night, in an endeavour to hear something of country and interstate signals. Each Saturday night, commencing from August 28, N.S.W. stations will be calling and listening for such signals, between 12 midnight and 12.30 a.m.,

and where-ever possible, will be active until 2 a.m. on the Sunday morning. It is hoped that systematic tests of this nature will eventually result in longer contacts, and later, it is hoped that more definite interstate schedules may be arranged.

The week-end of September 25 and 26 has been set aside for special tests with New Zealand stations. The co-operation of the N.Z.A.R.T. has been obtained, and N.S.W. stations are requested to make arrangements which will allow them to participate in these tests, so that we can adequately do our part.

Suggestions regarding these and other tests are cordially invited from any stations interested in 5 mx activities.

It is the intention of the U.H.F. Section to keep a comprehensive record of activities in N.S.W., past, present and future. The work will be in the hands of Messrs. M. H. Meyers, (2VN), J. M. Doyle (2JU), and H. Peterson (2HP), President of the N.S.W. Division. This committee is particularly anxious to gather as many authentic details of early efforts as can be traced. Any amateur who can assist is asked to communicate with any of the above committees.

The N.S.W. Secretary, (W. G. Ryan), has informed the U.H.F. Section that Mr. D. Knock (2NO) has, on behalf of the "Bulletin," made available the old "Australian Radio News" Cup for annual competition among Institute members. It is to be awarded to the individual amateur judged to have contributed most to the advancement of U.H.F. work over a 12 months period. The U.H.F. Section offers its sincere thanks to Mr. Knock, and the "Bulletin", for this splendid offer.

Meetings of the U.H.F. Section are held in the Y.M.C.A. building on the first Thursday of each month at 8 p.m. Every Institute member is welcomed. The next meeting will take place on Thursday, 2nd September, and Mr. Lusby, VK2WN, has kindly consented to deliver a lecture "Automatic Receiving Apparatus." The Lecturer is Final Year Student in Radio Engineering at the Sydney University and an authority upon his subject.

56 MC RECORDS

VK2ZC and
VK2NO lay Newcastle Bogey."
By 2NO.

June 27th, 1937, will be a memorable and historic day in the annals of the N.S.W. Div., of the W.I.A. It was the occasion of a 56 MC Field Day in which several stations co-operated. It was hoped to work direct across water from Port Kembla to Newcastle, but much to everybody's regret, this tie-up did not eventuate. During this day, each station had a definite time-schedule to work to on a test transmission, and the views given here are from the writer's experiences. It was fitting that the writer should have been assisted throughout by Eric Ferguson, Ex VK2BP, famous for his Blue-Mountain-Sydney 5 metre work. Sharp at 11.45 a.m., VK2ZC's ICW signal was logged clear and solid. The signal varied from R6 to R8 plus and when he changed to phone just before completing his schedule, he was as loud as a local station. From 12 noon to 12.15 p.m., VK2NO followed with an ICW transmission. No other station in the schedules than VK2ZC was heard, but two stations, VK2UV and VK2VB were heard at R7 phone. It was assumed that these stations were in Sydney and working locally, but it was later learned that 2UV was at Bulli, and 2VB at Sublime Point! A pity they didn't let us know they were going out with mobile gear. In the early afternoon, Eric and myself scoured the 56MC range of the receiver without hearing anything of VK2ZC. Considering this strange, it was decided to listen on 7MC and see what was doing.

VK2WI at Port Kembla and VK2ZC at Newcastle were heard in QSO checking results and stating that so far only 2NO had been heard there on 56MC. We camped on 2ZC and at last managed to get in on the confab. I told 2ZC that he was OK with me on 56MC and to go ahead. At this stage 2ZC and 2NO worked duplex. 2ZC on 56MC and myself on 7MC. On changing to 56MC at 2NO, two-way contact was at once established. Later, we made a sked for

9 p.m. This was kept and again contact established. In sharp contrast to 2ZC's morning signals, these night-path signals being much reduced. R2 to R6 with a most peculiar form of fading giving a five or ten times a second re-modulation of a single dash. 2ZC had exactly the same effect on my signals. 2ZC worked from a house on my signals. It must be understood that the two stations were not up on any special hilltops. 2ZC worked from a house in the Shepherd's Hill district of Newcastle, elevated it is true, but a normal residential suburb. 2NO worked from the home location in Bronte, Sydney. The climax came during the following week, when a letter was received from VK2DN at Deniliquin to the effect that he logged a 5 metre ICW signal very weakly at 12.5 and 12.11 p.m. on 27/6/37. All he could identify was "De VK" as the signal faded swiftly. It so happened that the bi-directional twin dipole array at 2NO was pointing due SW and NE, being on the Northerly direction for working 2ZC. VK2DN used a three valve super-regen; with an aerial five half-waves in length sloping toward Sydney. The time corresponds to the time when 2NO was the only station on the air on the ICW test period, and is fairly conclusive. The U.H.F. section in Sydney is very bucked, and this two-way work with Newcastle 70 miles away over mountains, and the reception in Deniliquin 360 miles airline from Sydney, are the foundation stones of protracted concentrated effort. We shall be running almost monthly special week-end scheduled transmission tests for zoned country districts before long. It is strange in view of 2DN's reception that nothing was heard of 2GU in Canberra as the beam angle would take in this location reasonably well at the distance. The fascination of 56MC work is that one never knows where signals are likely to re-appear, and mostly they do so in places where nobody happens to be on the job. That is a matter that all really keen experimenters, and that goes for receiving men too, can rectify by proper organisation. The 10 metre band was an unknown quantity until everybody took a genuine interest and 5 metres is now in that trans-

ition stage. The gear used at 2ZC and 2NO is right up-to-date. 2ZC's transmitter uses a long line control P-P 800 oscillator followed by two 800's as the final. Modulation is by a Class AB 6L6G system. The R.F. input is 60 watts. His aerial consists of four dipoles in HH array with reflectors, and fed by a 600 ohm line with matching stub. Receiver is a super regen: with 955 and 76. This was found to be more efficient than a 9 valve superhet. At 2NO the transmitter consists of a three stage MOPA with 6L6 EC oscillator (10 to 5) and RK25 buffer. This exciter drives two 35T's in P-P with up to 100 watts, Class B 46's supply modulation. The array in use on 27/6/37 consisted of the faithful twin-dipole with half-wave spacing, linked by twisted pair, and fed by 600 ohm line at the centre. The system is out of phase giving end-fire directivity. The receiver is the new de-luxe super-regen with 956 acorn TRF stage capacity coupled to a 6K7 EC detector, 76 interruptor, and 41 audio. This receiver takes in 2½, 5, and 10 metres by plug-in coils on WT/22 insulation.

It is better than any superhet yet tried, but a new super is to be built with 956 R.F. stage and 954 detector ganged, and separately controlled 955 oscillator, 5,000 KC IF stages, noise suppressor, BFO etc. Despite the results obtained with the twin dipole array, the writer is convinced of the superiority of a correctly adjusted Bruce array with four half-waves. If a reflector could be conveniently placed behind such a Bruce, and the whole arranged for rotation, it would be about the ideal. Ideas of using a bamboo frame are rapidly materialising, plus a commutator feeder connection for the 600 ohm line. In the very near future VK2NO will arrange for automatic transmitter keying on 56MC for lengthy periods in pre-arranged directions, to give the countrymen a definite successive week-end signal to look for.

LAKEMBA RADIO CLUB—VK2LR.
By 2DL.

At the time of writing these notes it is learned that two of our club members were successful in the last A.O.P.C. exam., including the Sec-

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retary, Mr. Brown. The Hurlstone Park and Canterbury district is fast becoming "ham infested." For the benefit of those in other districts who continually complain of local QRM, might it be mentioned that, taking Hurlstone Park tram terminus as centre, there are no less than 12 amateurs within a radius of half a mile. Supers are fast becoming the order of the day; 2CL has just installed an 8 valve communications type of receiver which is giving very excellent performance. 2VA has had one of these in operation for several months and also reports most satisfactory results.

At the last meeting of the club, Mr. Freeman, 2AS delivered a most interesting lecture on Speech Amplifiers and Modulation. He was requested to give further talks along these lines at some future meetings. A new transmitter and receiver for use at the club rooms is being constructed by VK2VA and should be in operation at an early date.

ZONE 4 NOTES.

VK2TY.

Well Newcastle calls you from sunny N.S.W. where we are now basking in the warm spring sunshine.

The Silverthorne Cup has been won by VK2BZ scoring somewhere in the vicinity of 5,000 odd points. This is a remarkable score when it is considered that one point is allowed per thousand miles. The total is then multiplied by the number of countries worked. Previous best scores have been somewhere about 2500 points (as scored by the writer last contest.)

Contests have become very popular in the Newcastle District and quite a number are under consideration by the committee of the NARC.

These notes naturally contain more news of Newcastle than other parts of the Zone as there are more hams here.

I hear that VK2KZ up in the coal-fields is now using 6L6G C.O. 6L6 doubler 841 Buffer 830 B in final.

2ZW here in Newcastle still allows his 852 to take up space in the transmitter and uses the previous stage (A 6L6G) as P.A.

He occasionally works local such as 2BZ who makes a specialty of 6L6's and Reiss mikes. 2AEZ works quite a bit of dx these days. I was very surprised to see 2XQ of Maitland come to light to take second place in our contest. 2DG has sked with K7? each week and continues to get across to him Keith has about 90 countries in two years. 2AES tells me he has joined the Cuckoo Club a new idea in N.S.W.

The idea is to encourage the boys to get on the air on 40 mx early mornings.

The club here in Newcastle extends an invitation to any ham who happens to be in Newcastle on Thursday nights to attend its meetings at 101 Tudor St., Hamilton.

Incidentally any ham who is in Newcastle at any time and is looking for some of the boys, just pop in to Martin de Launay Pty. Ltd. and ask for TY.

Had a good tip given me the other day re modulation transformers for low-power rigs.

Two Speaker Transformers turned back to back i.e. voice coil secondaries joined together might be useful to some.

ZONE 5 NOTES.

VK2IG.

Though the DJDC contest on, there is not much activity here. Europeans at R8 during the afternoons but still rather hard to raise.

20J is on his 40 metre skeds with W9JO again but rather qrl.

2QE has EC osc with 6L6 buffer 45, and final 10, and has it doubling to ten metres in good style.

2EU going to try 20 metre fone and qrl winding coils etc.

2QD has pair lens as osc and using fone on them working very fb.

2AFD not heard yet as still qrl business.

2IG building tal rig but not finished yet.

Here's a couple to look for XZ20B Burma about 1415O and FP8PX and VS4JS on the other end of 20. They appear fairly easy to raise except FP8.

Victorian Division

U.H.F. SECTION NOTES.

By 3JO.

At the first meeting for the year held on July 20, the election of office bearers for the ensuing year resulted as follows:—

Chairman, Ivor Morgan, 3DH.
Secretary, Laurie Hoobin, 3VH.
Technical Advisers, Alec Clyne, 3VX and Val Barnes, 3OT.

3VX reported on progress of the frequency meter and after some discussion the gang were assured that this piece of apparatus would soon be ready for use.

At this meeting it was decided to discontinue the Saturday meetings as, at the last few held, the attendance had been very poor.

Another field day has been mooted but, as it is unlikely to be held before November, there is still plenty of time to discuss and arrange details. All interested in the ultra-highs are asked to assist to make this one of the best field days yet held. For further details watch these notes or, better still, come along to the next U.H.F. meeting and bring your suggestions.

Activity on the band, at present used by the U.H.F. gang, has, at this location, been confined mainly to the week ends with an occasional mid-week flutter, and the impression thus gained has been that things are very quiet. The most regular at present are 3PS, 3OJ, and 3LG others not so regular 3VH, 3PL, 3SJ, 3EM, 3XM, 3QJ and those not heard at all 3OT, 3OF, 3JD, 3LL, 3UX, 3NB, 3VX, 3CP, 3BQ, 3YP although the latter's harmonic from 28 mc is very strong here.

3PS is the most recent arrival on the band and has threatened to bring down some of the RAAFWR boys to keep him company.

Last night Aug., 17th was the UHF meeting night, but, as there were insufficient present for a quorum, the evening was spent with the W.I.A. short wave receiver just completed by the Short Wave Group. It is hoped that the next meeting on the 21st Sept., will be better attended, as it is expected that the freq meter will be well advanced, and that something

definite will be available re the 56 mc transmitter for 3WI, the construction of which has been delayed pending experiments by various members of the section.

Don't Forget—56mc Field Day in November and next meeting night 21st September.

'PHONE SECTION.

By A. L. Johnson. (VK3FL)

During the last weeks there have been signs of greater activity on the 200 metre band and several of the stations were to be heard testing late at nights. 3RI has been heard operating on Saturday evenings and running into the early hours of Sunday morning. They appear to have improved in their strength but the quality as received at Camberwell does not come up to the standard of some of the other stations, although no doubt if they continue their testing there will be improvements in their tonal quality. 3AM is another who has been burning a hole in the ether as well as the midnight oil and he seems to be settling his gear in its new QRA quite to satisfaction, as it still retains the quality of its previous locations. After the zero hour 3BY and 3AM have had some very interesting QSO's. It has been suggested that these two stations could possibly QSO over the dividing fences providing they could generate sufficient lung power. 3PA has been testing with two turntables and pick-ups and struck some trouble through upsetting an earth return but has since located the trouble and continues in the usual 3PA style.

The fone section held its meeting at the Institute rooms on the 27th July and it was indeed a most interesting night. After the general business had been dispensed with there was a discussion by Mr. Thompson 3TH on the Balance Sheet of the Institute for the benefit of those who were unable to attend the general meeting. This was followed by a debate as to the merits of power input to R.F. amplifiers.

Unfortunately one of the older members of the gang 3LM has decided to discontinue his activity on the 200 metre band and his decision will be regretted by this section to say nothing of those who have listened to his transmissions over the past years.

As Mr. George Thompson our friend 3TH has done quite an amount to assist the boys and the Institute as a whole, they decided some time back of providing him with some token to remind him that what he had done was appreciated. This thought materialised and it was the pleasure of our new chairman Mr. Sievers 3CB to present George with a smoker's outfit suitably inscribed. It appears we had chosen an appropriate moment as it was his birthday on the previous Saturday.

After distribution of crystals our evening quietly closed.

SHORT WAVE GROUP NOTES.

By O. E. Davies.

The meetings of the Group during the past few months have been drawing very good attendances. The main item of business being the completion of the High Frequency Receiver for 3WI.

and has been installed at 3WI. A

The Receiver is now completed complete description together with circuit diagrams and mechanical layout are being drawn up and will be published in the Mag in the very near future.

July 28th was the Annual Meeting of the Group; the attendance was not as large as could have been desired although a fairly representative meeting was held. The election of Office Bearers resulted:—

Chairman: Mr. H. Stevens, 3JO

Vice-Chairman: Mr. H. Burdekin.

" " " Mr. D. Ayre, 3KP

Secretary: Mr. O. Davies.

Tech Adviser: Mr. D. Ayre, 3KP

During Mr. Ayre's absence abroad Mr. G. Budden was elected to act as Technical Adviser.

The Group were the guests of Messrs. McIlwraith, McEacharn on July 15th, when a visit was paid to the MV "Kanimba." The Group had the pleasure of inspecting the Short Wave Broadcasting equipment and also the Ship's Wireless Room, this was followed by an excellent Supper in the Saloon. Anyone who missed this visit was indeed unfortunate. May I again thank the Agent's of the vessel for their kindness and thought in making this visit possible.

Denys Ayre (3KP) has left these shores on a six months tour to "G" Cheerio and good hunting Den.

Colin Harvey (3UO) swotting to be a "B.C." Op.

Herb. Stevens (3JO busy on Council and 5 mx.

Bert Burdekin just built a new shack (sorry shed.)

Alan Anderson built a new Super and does it go? Ask Alan.

George Budden finished his Super and then fell off the Mo bike.

Vick Smith studying for his A.O.C.P.

Ron Chard busy learning the in and outs of our new Super.

Self trying to get Group on to 80 mx for Traffic etc., might succeed soon. Hope so anyhow.

GIPPSLAND NOTES.

By 3WE & 3DG.

VK3BR.—Still qrl but might put qrp rig on air to join the gang, as the bug is beginning to bite again.

VK3GO.—Not heard on lately, expected to be rebuilding rig since having shifted to new gra. Lets hear from you Graham.

VK3SS.—Keith has now got going on 3.5 and 7 mc and getting over to ZL fb. If you chaps using 6P6's want a new circuit ask Keith he has a new one of his own.

VK3LY.—Ron last heard of taking lessons in German, so lookout when we next hear his fone.

VK3QB.—Jack getting out nicely on 3.5 and 7 mc wid his 802 Tri-Tet xtal Osc and half wave 40 mx Zepp, worked a couple of W's last weekend.

VK3IL.—Bob still on 7 mc getting his share of contacts, has cleared note up a bit, but still room for improvement.

VK3DI.—Still plugging along wid QRP fone very patchy at times Jim. Erecting new ant and hopes to try 20 Mx been collecting dope on it from 7 RC.

VK3JE.—Not heard since having vacated 200 mx band.

VK3EA.—Was reported to be on 7 mc cw some time ago but not heard lately.

VK3XZ.—VK3HZ.—Ops at B. Class 3UL Warragul, a couple of Scots with a Scotch mitter make an ell of a noise on 80 mx and very anxious to work 3 WE on 5 Mx and break VK 3 record.

VK3DG.—On qrp fone 3.5 mc, hopes to go gro shortly when can

get time to build new power supply.

VK3PR.—Has souvenired some B Batts. and paralled wid the vibrator, but little difference to sig Ron. Been sprucing up shack and rig, going to try 10 mx shortly.

VK3EG.—The dx king vy quiet but understood to be building a super rig for fone what oh dx Ivan.

VK3WE.—Bill been qrl since VK-ZL contest knocked up a gud score but not like some VK 2's did not work any pirates. Lost one of his ever faithful TCO/410's Bills pace in contest too much for it, but still getting out wid a pair of tens in final. Had a visit from 5 KD during week-end and has talked him into trying 80 Mx fone when he goes back.

Leave that to Bill.

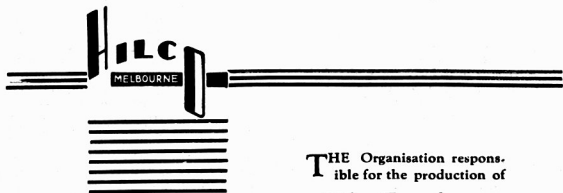
Gang advise 3 DG or 3 WE of your doings and keep Gippsland on the map.

South Australian Division

by 5KI.

South Australian Divisional Notes
During the month, the president Mr. Marshal Hyder, resigned from his office owing to pressure of business.

Members are eagerly awaiting to see who will succeed Mr. Hyder. Winners of the VK5 code copying contest were as follows—City member : Mr. Joe Kilgaraff, VK5JT. Country member, Mr. Wally Govan, VK5WG. At the general meeting Mr. Kilgaraff was presented with the cup for winning the above contest. No news has come to hand of the ham feast held at Crystal Brook over the week-end of August 14th and 15th, but owing to the extensive rain storms, the outing was not attended by city hams. The German dx contest is at the moment interesting the local dx hounds, and the air is full of all types of signals calling for contacts.



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Mr. Pearn 5PN, is still doing good work for the country members by his transmissions each Sunday morning. The local 5 mx band is simply alive in the evenings, the reasons for the activity is the contest organized by U.H.F.'s. This contest stipulates that contacts are not counted unless they last the duration of a quarter of an hour.

Queensland are to be congratulated on their recent success of covering a distance of 70 miles.

Arrangements are in hand for a big social and dinner to be held at Xmas time, its a bit early yet, but you will hear more about it later. All readers are brought to notice that a back to 40 meter week will be held after our own dx contest. It is sponsored by American hams also the national field day to be held in December. Get that portable rig going chaps. Interest is being shown in the all band CW test next month, and competition should be more keener in VK5 this year. W.A.S. certificates are now available, so send in your cards to the Secretary Mr. Walker. Those present on August 11th enjoyed a talk by Mr. Cheeseman on model motor aeroplanes and was accompanied by motion films demonstrating their ability.

COUNTRY NOTES by VK5PN.

5QR.—Reg. of Jabuk, was recently heard discussing with 5RT possibilities of a Radio chess match. Should be very interesting but let us hope the carriers will not be left running whilst pondering over next move.

5WG.—Winner of Hobcroft Gold Medal for the Sth Aust. 1937 Code Copying Contest. Congratulations Wally.

5HR.—Runner up in above. Bill was rather unfortunate in losing several words whilst looking for more paper.

5RE.—Hobby going to become very active on 5 metres. Ambitious too: Together with 5BF he is planning big things. Watch out for starting developments.

5RJ.—Heard recently with particularly good 'phone. He has built up a new frequency meter and is asking all the boys the frequencies of their crystals, for calibration purposes.

5NW.—R. H. Bailey, Crystal Brook, Bob has started up; is using

E406 TNT osc and E406EA 20 watts input on CW and 12 watts on 'phone Mike is a G.E.C. Speech amplifier 6C6, and the modulator an F443 Heising modulation. The antenna system is single-wire matched impedance. The signal-trap used is a Philips 4-Tube receiver.

5FB.—Frank has been very busy organising a ham-feet which eventuated Aug 14th and 15th at Crystal Brook. Country members present included 5BK, 5LC, 5YM, 5FW, 5WG, 5NW and of course Frank himself. Rain prevented 5SL and 5HR from going along.

Now chaps, you all know about the QSO contest being conducted by 5FB. It is essentially for Sth. Aust. country amateurs. The prizes are worth while, so please do your part towards making this contest an outstanding success.

Further information and progressive scores will be announced as they come to hand, in the Sunday Country Sessions.

Tasmanian Division

VIA 3MR/7DH.

By 7KV.

The August general meeting was held at the Y.M.C.A. rooms on Thursday 5th, and, although the attendance was only fair, those present voted the accommodation as much more comfortable due to the efforts of 7HM in providing the necessary fuel for an R9 fire.

Following the usual business, a general discussion on 5 meter work took place with Gil Miles 7KQ as leader of the choir. With such an ardent enthusiast in our midst, it is hoped that a more organized method of attack on this band can be formulated, as up to the present, progress has been retarded by lack of active participation on the part of most of the gang. VK7 offers considerable natural advantages in the shape of some fairly high mountains at distances of over 100 miles and within visual range, and it is considered that the first genuine attempt on the VK 5 meter record could be attempted.

Our tireless secretary's drive for new members continues to meet with great success, although the ad-

vantages have lately been unfortunately off set by a couple of resignations. The council deeply regret such happenings and trust that the ex members concerned will again join, and place the division in the happy position of a few years ago when every licensed experimenter was a member. As from the beginning of the current financial year, institute activities had to be curtailed chiefly by relinquishing tenancy of our regular rooms, but as revenue for the year proves to be more buoyant than previously, next year may, in the words of our politicians, see a return to prosperity.

Arrangements have been made in collaboration with the local model engineering society for the holding of an amateur radio and hobbies exhibition during December. As good prizes are on offer, the fraternity are urged to polish up their receivers, transmitters or any other pieces of apparatus in readiness.

The Doings.

7YL threatens to become a nervous case for a few weeks by having more than a passing interest in the forthcoming dx contest. Commiserations on behalf of the troops JOY?

7JB has heard that dx with high power offers no lure and has reverted to the use of only one 800 tube! Curiosity is being exhibited as to the whereabouts of the other one. No prizes for solution.

7CM has served the six months probationary period on CW and is getting satisfactory results with grid modulated 46 in PA.

7DH in between capably managing traffic channels, fills in time with fone. Some assorted watts into 210's as final amplifier.

7CL still as active as ever judging by the frequency with which his call appears in the dx departments of overseas magazines.

7CK Roly has given up hope of getting the AC mains installed so intends to install a private power supply.

7HM has been putting in every available week end in attending his country mansion, and as spare time in between is occupied with secretarial duties—has little time for the bands.

7KQ and 7KV still persisting with 5 mx. The latest achievement being duplex over about a distance of 8 miles. Surely a VK7 record.

Conditions. — 10 meters shows signs of improvement as good signals have been heard from G6DH, ZE1JU, J2IM in addition to the usual flock of W ones.

20 meters at the time of writing is full of European stations in the DJDC contest.

40 meters is receiving plenty of attention from the fone gang.

80 meters has been the battle ground for the fone contest with ZL and the mainland—7YL and 7JB being the southern representatives but unfortunately most of us can only indulge after broadcast hours.

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Officer Commanding: Flying Officer R. H. Cunningham, 397 High Street, Glen Iris, S.E.6, Victoria (VK3ML).

District Commanders—

Second District, N.S.W.—A. G. Henry, Clareville Avenue, Sandringham (VK2ZK).

Third District, Victoria—Pilot Officer V. E. Marshall, 3 Myrtle Avenue, Kew (VK3UK).

Fourth District, Queensland—A. E. Walz, Sandgate Road, Nundah (VK4AW).

Fifth District, South Australia—F. M. Gray, 52 Ormond Grove, Toorak Gardens (VK5SU).

Sixth District, West Australia—J. Mead, 111 Gerrard St., East Victoria Park, W.A. (VK6LJ)

Seventh District, Tasmania—R. Cannon, Goldie Street, Wynyard (VK7RC).

3rd District. (VK3UK—3Z1.)

3Z1 is away on holidays at Jervis Bay, N.S.W., and the most difficult task possible is to be sprawling out on the sand with the roar of the surf in one's ears trying to think of Reserve doings of the past month. Melbourne, and all the life that is normal for 50 weeks of the year, seems very far away and intangible during those other two weeks. If a holiday is going to be what the name implies, however, that is exactly how things should be.

VMC as a whole is having a holiday, or perhaps one should say a spell. It is a well-earned spell, too—the first for nearly eight years. During that time there have been only two Sundays in the year on which a schedule has not been held, the Sunday in Christmas week and Easter Sunday. It was felt that a break of five weeks would have a thoroughly beneficial effect on the whole district, and at the end of that time a changed form of schedules would lend a novelty and freshness to ordinary training that is the very essence of a successful organization.

As an increase in operating ability is one of the resultants of Reserve membership, two of the contests arranged by FHQ will be of interest to Reserve men, because both will call for operating ability of a high order. The handling of traffic by the laid down procedure does indicate how little plain language need be used, and the resulting snappishness of each "over" is of inestimable help in any contest.

The outstanding event of a personal nature during the month was the practical demonstration and explanation of the cathode ray oscilloscope by 3DV at the August K.P. meeting. It proved to be one of the most instructive and interesting lectures we have ever had.

RESERVE NOTES.

Sixth District.

(By 6B1—VK6JE.)

VMF considers itself cast to the outer darkness in the affairs of Lady Luck, having to record the resignation of 6Z1 owing to business requirements. This is the second occasion in a few months that VMF has been deprived of its leader. We are mighty sorry to lose you, Jack, OM, and wish you every success in your new sphere. We will miss your copperplate fist, but trust that your absence from the air is only temporary, and that you will take over Reserve affairs again when you settle down in the new location. In view of the above, 6B1 has been deputed as scribe, so no brickbats, please! 6Z1, 6A1, 6A2, 6A5, 6A6, and 6B1 are on watch every Sunday, and the new recruits are showing great promise, although progress is hampered by the absence of training manuals. This, we hope, will be rectified in the near future. Interstate watches between 5A2 and 6B1 have been rather uncertain lately, owing to extremely erratic conditions, signals varying from R7 to R2, with complete fade-outs at times. August notes contained an error in reporting 6B1 on BC work; this should read 6A2, who is staff man on BC station 6AM.

Amateur Radio

The Avro Avian created a deal of interest, and naturally the radio equipment was the centre of attraction for members. 6A1 still suffering from shock—one of the gang heard a PY calling him, but Frank was not listening. Hard luck, OM; you will have to instal an automatic device for registering calls from South America.

(Continued from Page 15)

siderably. Duplex, though interesting at times, is, at its best, but a poor second to "break-in," besides causing double the occupancy on the band.

The grammar and pronunciation used is, unfortunately, not of the best in many instances, and all amateurs on telephony would do well advised to study these matters. Several words are consistently mispronounced, especially two common ones—reiss and amateur. Reiss is pronounced rice, not reece, and amateur is ama-ter, and not amacher. If you doubt me, consult a dictionary. Heising is hi-sing, and not hee-sing. Of course, there are the letters "h" and "g" in the English language, though often these are dropped or added in the wrong places. However, one of the most noticeable features from this point of view is the use of the expression "er." Listen to almost any contact, and count up the number of times this expression is used, and you will be due for a surprise.

Last, but not least these Morse abbreviations. "QRM" for interference, "QRN" for static, 73 for best wishes—incidentally the code is 73 and not 73's—and a host more. They are totally incorrect on tele-

phony, and, besides, often lead to mis-reception. One often hears "QRN; N for Nellie," which is longer and no easier received than the one word—static.

In conclusion, may I say that I consider the average station of telephony transmissions is on the improve, and I trust these comments will further this.

(Continued from page 11)

small dry cell the meter will read in the normal upward direction. Adjust the value of the R1 bias potentiometer so that 100 per cent modulation causes approximately 2/3 of the full scale movement of the meter. This will permit the meter to be calibrated to values in excess of 100 per cent for the measurement of positive peaks. Care must be taken with the polarity of the diode potentials to ensure correct indication of positive and negative modulation. The latter is made evident by its inability to exceed 100 per cent as indicated on the meter.

The writer trusts that this information will be of value to experimenters, and offers assistance to all interested either by letter—don't forget the stamp—or by direct QSO on 20 or 40 metre band.

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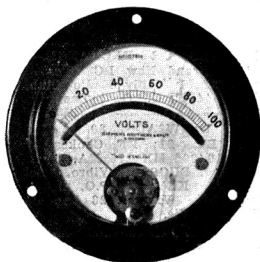
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